

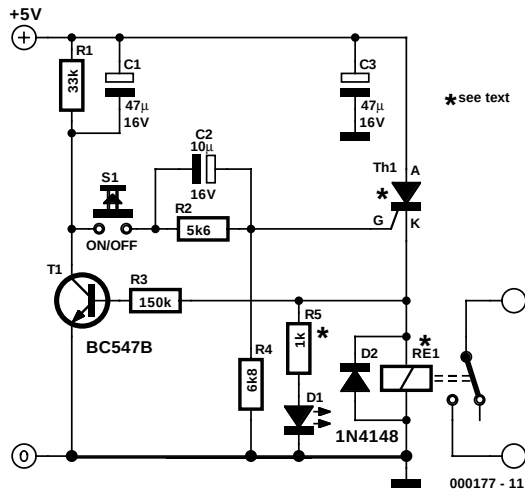
Thyristor Switch

011

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Normally, two pushbuttons are needed to control a thyristor, namely — you guessed it — one to switch it on and one to switch it off. With the circuit shown here, it is possible to control the thyristor using only one pushbutton. If S1 is pressed, a positive voltage is applied to the gate and the thyristor is triggered on. The LED lights up at the same time, the relay pulls in and the transistor conducts. This causes C1 to be charged, so that the next time the button is pressed, the ground potential is applied to the gate instead of a positive voltage. The thyristor then returns to the nonconductive state. Capacitor C2 provides proper debouncing of the pushbutton. The switching time is consequently around 0.5 s. Devices in the BRX or BRY series can be used for the thyristor.

The current consumption of the thyristor switch is around 12 mA in the On state with a supply voltage of +5 V. In the Off state, the circuit draws practically no current (except for a very small parasitic current). The supply voltage range, at +3 to 5 V, is fairly large. The series resistor for the



LED, and if necessary one for the 5-V reed relay (which has a coil resistance of 500 Ω), must be adapted to the value of the supply voltage.

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